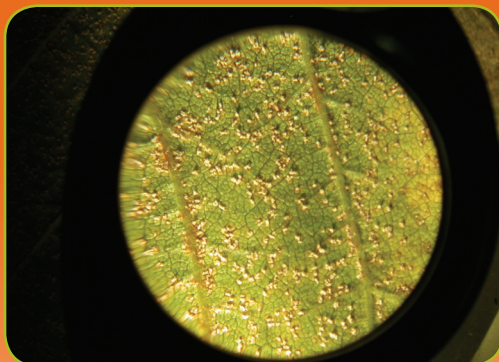


IDENTIFYING SOYBEAN RUST



Upper leaf symptoms



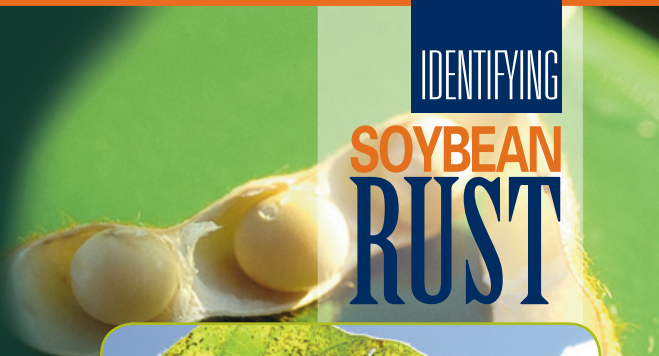
Pustules (spores) under 20x hand lens

When scouting for soybean rust, focus on:

- Early planted fields with early maturing varieties
- Low lying or protected fields with prolonged dew periods
- Fields with early canopy closure

For soybean rust detection on the plant:

- Examine lower leaves of the plant
- Use a 10 to 20X hand lens to detect pustules (spores) on underside of leaves



Back lit leaf



Early symptoms

For confirmation and diagnosis of soybean rust contact your state plant diagnostic lab.

These can be found listed at:

www.apsnet.org/directories/univ_diagnosticians.asp

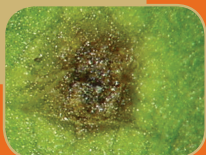


BACTERIAL BLIGHT

- Affects mid-to-upper leaves.
- Angular lesions, reddish-brown to black centers.
- Initial angular water soaked lesions with yellow halo.



Difference from Soybean Rust: Water soaking; angular lesions; lesions on leaf underside are not raised.

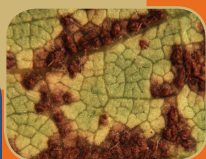


BACTERIAL PUSTULE

- Affects mid-to-upper leaves.
- Lesions — small spots to large irregular shapes without water soaking.
- Lesions associate with main veins; pustules form in lesion centers on leaf underside. (10X)



Difference from Soybean Rust: Pustules not always with each lesion; pustules do not have spores in openings; openings are cracks instead of circular pores.



DOWNY MILDEW

- Affects upper leaves.
- Spots on surface enlarge into yellow lesions.
- Older lesions turn brown with yellow-green margins; size varies with age of leaf affected.
- Fuzzy fungal gray tufts on leaf underside (20x).



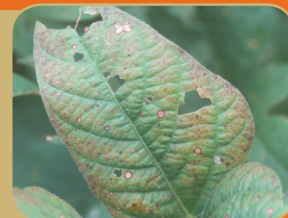
Difference from Soybean Rust: Lesions larger than rust lesions; no raised pustules on underside; fuzzy fungal growth on underside.



SIMILAR LOOKING DISEASES

CERCOSPORA BLIGHT AND FROGEYE LEAF SPOT

- Blight affects upper leaves exposed to sun after seed set; Frogeye affects lower leaves first.
- Blight starts as light purple areas on upper leaf surface which expands to cover surface; leaves leathery and dark reddish purple on upper surface only.
- Frogeye lesions start as dark, water-soaked spots; can have light centers; circular to angular brown spots with dark red-brown margins.



Difference from Soybean Rust: Blight — overall leaf area is discolored on upper surface only. Frogeye — discrete lesions larger than rust with defined lesion margins; no pustules evident on underside.

BROWN SPOT

- Affects lower leaves first.
- Irregular-shaped dark brown lesions on both leaf surfaces; size — small spots to large areas; adjacent lesions can form irregular shaped blotches.
- Infected leaves quickly yellow and drop.



Difference from Soybean Rust: No raised areas (on leaf underside; angular lesions; if dark lesions, lack of uredia is key symptom; first symptoms can look like rust; has same canopy distribution as rust.